

CLAIMS

1. Apparatus for transporting electrical energy characterised by a storage device which is formed from a plurality of storage elements (14) and which is arranged as a payload on and/or in a vehicle (10), wherein in the delivery of the electrical energy the storage device remains on and/or in the vehicle and the vehicle has a connection for transmitting the stored electrical energy upon discharge.

2. Apparatus as set forth in claim 1 characterised by accumulators and/or capacitors as the storage elements (14).

3. Apparatus as set forth in one of the preceding claims characterised by storage elements (14) which are mechanically and/or electrically combined to form storage device groups (12).

4. Apparatus as set forth in claim 3 characterised by a vehicle drive which is operable with the stored energy.

5. Apparatus as set forth in one of the preceding claims characterised by fixed stations (22, 26; 32, 36) for charging up and discharging the storage device and/or for converting the electrical energy.

6. Apparatus as set forth in one of the preceding claims characterised by intermediate storage devices (24; 34) at the stations (22, 26; 32, 36) for intermediate storage of the electrical energy.

7. Apparatus as set forth in one of the preceding claims characterised by at least one electrical collective connection for a plurality of storage elements (14) and/or storage device groups (12).

8. Apparatus as set forth in one of the preceding claims characterised by at least one opening in each storage element (14) for introducing or draining off a fluid.

9. Apparatus as set forth in claim 8 characterised by one or more collecting conduits which connect the openings of the storage elements (14) together.

10. Apparatus as set forth in claim 9 characterised in that the collecting conduit opens into a container on board the vehicle (10).

11. Apparatus as set forth in one of the preceding claims characterised by a device for monitoring individual storage elements (14) and/or for controlling the charging/discharging operation and/or for supplying or removing fluid.

12. Apparatus as set forth in claim 11 characterised in that the control or monitoring device indicates the operating condition of individual storage elements and/or storage device groups.

13. Apparatus as set forth in one of claims 11 and 12 characterised in that the monitoring or control device is arranged on board the vehicle (10).

14. Apparatus as set forth in one of claims 11 through 13 characterised in that the device includes at least a microprocessor and a memory device.

15. A method of transporting electrical energy by means of a vehicle, wherein the vehicle carries an electrical storage device as a payload, characterised by the following steps:

- charging the storage device with electrical energy;
- transporting the vehicle to a destination; and

- discharging the storage device at the destination.

16. A method as set forth in claim 15 characterised in that after charging of the electrical energy into the storage device but prior to transport of the storage device to the destination a fluid contained in the storage device is removed and that after transport of the storage device to the destination but prior to removal of the electrical energy fluid is introduced into the storage device.

17. A method as set forth in claim 16 characterised in that the fluid is cleaned after removal but prior to storage.

18. A method as set forth in one of claims 12 and 13 characterised in that the container is taken off the vehicle (10) after the departure of the vehicle with the fluid introduced therein or is put on board the vehicle before the vehicle (10) arrives respectively.

19. A method as set forth in one of claims 16 and 17 characterised in that the monitoring or control device detects the number of charge/discharge cycles for each storage element (14) and when a predetermined number of cycles is reached outputs a corresponding notification.